

CAMPYLOBACTERIOSIS

DISEASE REPORTING

In Washington

DOH receives approximately 900 to 1150 reports of campylobacteriosis per year, for an average rate of 18.1/100,000 persons. On average, 1 death is reported to be associated with *Campylobacter* infection each year.

Frequently named sources of infection in Washington include poultry, animals, infected individuals, and contaminated food or water.

Purpose of reporting and surveillance

- To identify sources of transmission (e.g., a commercial product or public water supply) and to prevent further transmission from such sources.
- When the source is a risk for only a few individuals (e.g., an animal with diarrhea or private water supply), to inform those individuals how they can reduce their risk of exposure.
- To identify cases that may be a source of infection for others (e.g., a food handler) and to prevent further disease transmission.

Reporting requirements

- Health care providers: notifiable to Local Health Jurisdiction within 3 work days
- Hospitals: notifiable to Local Health Jurisdiction within 3 work days
- Laboratories: no requirements for reporting
- Local health jurisdictions: notifiable to DOH Communicable Disease Epidemiology within 7 days of case investigation completion or summary information required within 21 days

CASE DEFINITION FOR SURVEILLANCE

Clinical criteria for diagnosis

An infection that may result in diarrheal illness of variable severity.

Laboratory criteria for diagnosis

- Isolation of *Campylobacter* from any clinical specimen.

Case definition

- Probable: a clinically compatible case that is epidemiologically linked to a confirmed case.
 - Confirmed: a case that is laboratory confirmed.
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A. DESCRIPTION**1. Identification**

An acute zoonotic bacterial enteric disease of variable severity characterized by diarrhea, abdominal pain, malaise, fever, nausea and vomiting. The illness is frequently over within 2-5 days and usually lasts no more than 10 days. Prolonged illness may occur in adults; relapses can occur. Gross or occult blood in association with mucus and WBCs is often present in liquid stools. A typhoid-like syndrome or reactive arthritis may occur, and rarely, febrile convulsions, Guillan-Barre syndrome or meningitis. Some cases mimic acute appendicitis. Many infections are asymptomatic.

Diagnosis is based on isolation of the organisms from stool using selective media, reduced oxygen tension and an incubation temperature of 43°C (109.4°F). Visualization of motile and curved, spiral or S-shaped rods similar to those of *Vibrio cholerae* by phase contrast or darkfield microscopy of stool can provide rapid presumptive evidence for *Campylobacter enteritis*.

2. Infectious Agent

Campylobacter jejuni and, less commonly, *C. coli* are the usual causes of *Campylobacter* diarrhea in humans. A variety of 20 or more biotypes and serotypes occur; their identification may be helpful for epidemiologic purposes. Other *Campylobacter* organisms, including *C. laridis* and *C. fetus* ssp. *fetus*, have also been associated with diarrhea in normal hosts.

3. Worldwide Occurrence

These organisms are an important cause of diarrheal illness in all parts of the world and all age groups, causing 5%-14% of diarrhea worldwide. They are an important cause of travelers' diarrhea. In developed countries; children (less than 5 years) and young adults have the highest incidence of illness. In developing countries, illness is confined largely to children under 2 years of age, especially among infants. Common source outbreaks have occurred, most often associated with foods, especially undercooked chicken, unpasteurized milk and nonchlorinated water; these occur in spring and fall. The largest number of sporadic cases in temperate areas occur in the warmer months.

4. Reservoir

Animals, most frequently poultry and cattle. Puppies, kittens, other pets, swine, sheep, rodents and birds may also be sources of human infection. Most raw poultry meat is contaminated with *C. jejuni*.

5. Mode of Transmission

By ingestion of the organisms in undercooked chicken and pork, contaminated food and water, or raw milk; from contact with infected pets (especially puppies and kittens), farm animals or infected infants. Contamination of milk most frequently occurs from fecal carrier cattle; people and food can be contaminated from poultry, especially from common cutting boards. Person to person transmission appears to be uncommon with *C. jejuni*.

6. Incubation period

Usually 2 to 5 days, with a range of 1-10 days, depending on dose ingested.

7. Period of communicability

Throughout the course of infection; usually from several days to several weeks. Individuals not treated with antibiotics may excrete organisms for as long as 2-7 weeks. The temporary carrier state is probably of little epidemiologic importance, except in infants and others who are incontinent of stool. Chronic infection of poultry and other animals constitutes the primary source of infection.

8. Susceptibility and resistance

Immune mechanisms are not well understood, but lasting immunity to serologically related strains follows infection. In developing countries, most people develop immunity in the first 2 years of life.

B. METHODS OF CONTROL**1. Preventive measures:**

- a. Use irradiated foods or cook thoroughly all foodstuffs derived from animal sources, particularly poultry. Avoid recontamination from uncooked foods within the kitchen after cooking is completed.
- b. Pasteurize all milk and chlorinate or boil water supplies.
- c. Implement comprehensive control programs and hygienic measures (change of boots and clothes; thorough cleaning and disinfection) to prevent spread of organisms in poultry and animal farms.
- d. Recognize, prevent and control *Campylobacter* infections among domestic animals and pets. Puppies and kittens with diarrhea are possible sources of infection;

erythromycin may be used to treat their infections, reducing risk of transmission to children. Stress handwashing after animal contact.

- e. Minimize contact with poultry and its feces; wash hands when this cannot be avoided.

2. Control of patient, contacts and the immediate environment:

- a. Report to local health authority.
- b. Isolation: Enteric precautions for hospitalized patients. Exclude symptomatic individuals from food handling or care of people in hospitals, custodial institutions and day care centers; exclusion of asymptomatic convalescent stool positive individuals is indicated only for those with questionable handwashing habits. Stress proper handwashing.
- c. Concurrent disinfection: Of feces and articles soiled therewith. In communities with a modern and adequate sewage disposal system, feces can be discharged directly into sewers without preliminary disinfection. Terminal cleaning.
- d. Quarantine: None.
- e. Immunization of contacts: None is available.
- f. Investigation of contacts and source of infection: Useful only to detect outbreaks; investigate outbreaks to identify the implicated food, water or raw milk to which others may have been exposed.
- g. Specific treatment: None generally indicated except rehydration and electrolyte replacement. *C. jejuni* or *C. coli* organisms are susceptible in vitro to a number of antimicrobial agents, including erythromycin, tetracyclines and quinolones, but these agents are of value only early in the illness and when the identity of the infecting organism is known, or to eliminate the carrier state.

3. Epidemic measures

Groups of cases, such as in a classroom, should be reported immediately to the local health authority, with search for vehicle and mode of spread.

4. International measures

WHO Collaborating Centres.